

Application Serial No. 10/583,018
Reply to Non-Final Office Action of April 29, 2008

PATENT
Docket: CU-4878

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Amendments to the Claims

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

Listing of claims:

- 1-2. (Canceled).
3. (Previously Amended) An organic functional element comprising at least a plurality of electrodes and an organic material layer, wherein at least one of the electrodes is composed of a metal having a melting point of 70°C or higher to 160°C or lower.
4. (Currently Amended) The organic functional element according to claim 3 [[1]], wherein the metal constituting the electrode is an alloy of Bi and at least one kind of other metals.
5. (Currently Amended) The organic functional element according to claim 3 [[1]], wherein a Bi component in the metal constituting the electrode is greater than that of at least one kind of other metals.
6. (Currently Amended) The organic functional element according to claim 3 [[1]], wherein the metal constituting the electrode is an alloy composed of Bi and one, two, three, four or five kinds of metals selected from a group composed of Sn, Pb, Cd, Sb and In.
7. (Currently Amended) The organic functional element according to claim 3 [[1]], wherein the metal constituting the electrode is an alloy of Sn and Bi, and a Sn component is greater than a Bi component.

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8. (Currently Amended) The organic functional element according to claim 3 ~~[[1]]~~, wherein the metal constituting the electrode is an alloy of In and Sn.

9-15. (Canceled)

16. (Currently Amended) The organic functional element according to claim 3 ~~[[1]]~~, wherein a gap made between the organic material layer and a base material having a concave part opposite to the organic material layer is filled and formed with the metal.

17. (Previously Amended) The organic functional element according to claim 16, wherein the gap has one or more opening parts, and the opening parts are sealed with a hardened metal.

18. (Currently Amended) A method for manufacturing ~~[[the]]~~ an organic functional element ~~claim 1 comprising the steps:~~

providing at least a plurality of electrodes and an organic material layer,
wherein at least one of the electrodes is composed of a metal having a melting point
of 70°C or higher to 160°C or lower,

~~which comprises~~ coating the organic material layer with a particle paste of the metal constituting the at least one of the electrodes, and
melting and cooling the particle paste to form the electrode.

19. (Currently Amended) ~~[[The]]~~ A method for manufacturing ~~[[the]]~~ an organic functional element ~~claim 1 comprising the steps:~~

providing at least a plurality of electrodes and an organic material layer,
wherein at least one of the electrodes is composed of a metal having a melting point

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of 70°C or higher to 160°C or lower,

~~wherein a pressing the at least one melted electrode maintained in the base material having a concave part in which the metal constituting the at least one of the electrodes is melted and maintained is opposed to, and pressed against~~[[,]] a substrate having the organic material layer formed thereon, such that the organic material layer is contacted with the metal, and

~~followed by~~ transferring the metal to the organic material layer and cooling it to form the electrode.

20. (Currently Amended) The method for manufacturing the organic functional element ~~claim 4~~ comprising the steps:

providing at least a plurality of electrodes and an organic material layer,
wherein at least one of the electrodes is composed of a metal having a melting point of 70°C or higher to 160°C or lower,

~~wherein providing a gap provided with one or more opening parts is made~~ between the organic material layer and a base material having a concave part opposite to the organic material layer,

melting [[and]] the metal constituting the at least one of the electrodes is melted,

~~injecting~~ injecting the molten metal constituting the at least one of the electrodes through the opening part into the gap, and

~~cooling~~ cooling the molten metal constituting the at least one of the electrodes to form the electrode.

21. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim 20, ~~wherein~~ further comprising a vacuum injection method composed of arranging the metal in the opening part, evacuating the gap and its surrounding predetermined space, and opening the surrounding space onto

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air in this order is carried out to inject the metal into the gap and thereby forming the electrode.

22. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim ~~[[20]]~~ 21, ~~wherein an arrangement of~~ further comprising the steps of arranging the metal in the opening part and ~~a suction of~~ suctioning a gas in the gap through another opening part not provided with the metal ~~are carried out in this order~~ to inject the metal into the gap and thereby form the electrode.

23. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim ~~[[21]]~~ 22, wherein a formation of the electrode by the vacuum injection method into the gap or a formation of the electrode by the suction of the gas in the gap is carried out in an inert gas.

24. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim 23, wherein the inert gas is ~~[[a]]~~ nitrogen, ~~[[an]]~~ argon, or a mixed gas of ~~[[the]]~~ nitrogen and ~~[[the]]~~ argon.

25. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim 20, ~~which includes~~ further comprising the step of sealing the base material having the concave part with the opening part ~~sealed~~ by cooling and hardening a molten metal.

26. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim 19, ~~wherein the~~ further comprising the step of forming the electrode ~~is formed~~ in a predetermined form depending on a shape of the concave part and a gap.

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27. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim 26, wherein the concave part and the gap have a plurality of striped shapes.

28. (Currently Amended) The method ~~for manufacturing the organic functional element~~ according to claim 19, ~~wherein the~~ further comprising the step of forming the base material having the concave part ~~is made~~ of one kind of member selected from a group composed of a glass, a metal, a ~~ceramics~~ ceramic and a resin, or a composite material of two or more thereof.

29. (Currently Amended) An ~~organic EL element~~ organic functional element having the electrode of claim 3 [[1]], wherein the organic functional element is an organic EL element.

30. (Previously Amended) The organic EL element according to claim 29, wherein the electrode is a cathode.

31. (Canceled).

32. (Currently Amended) An organic semiconductor element having the electrode of claim 3 [[1]], wherein the organic functional element is an organic semiconductor element.

33. (Canceled).

34. (Currently Amended) An organic TFT element having the electrode of claim 3 [[1]], wherein the organic functional element is an organic TFT element.

35. (Canceled).